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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,185	10/15/2004	Keiichi Nagano	50070-096	1951

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Washington, DC 20005-3096

EXAMINER
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CHOW, JEFFREY J

ART UNIT	PAPER NUMBER
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2628

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/511,185

Applicant(s)

NAGANO ET AL.

Examiner

Jeffrey J. Chow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 01 August 2006 regard to claims 1 – 11 have been fully considered but they are not persuasive.

Applicant argues that Kato disclosing a criteria location does not necessarily mean a middle position of the range of motion of the mirror (page 5). Kato discloses in Figure 2 a positive angle (“+”) and a negative angle (“-“) in where the reflecting mirror can move 5. Kato discloses in Figure 5 at step s5 the reflective mirror returns to a “0” position. It is inherent that 0 is between a positive scale and a negative scale. Step s5 is after step s4 in where step s4 determines if the engine is off, then proceed to s5 and if the engine is not off, the proceed to s1. This suggests the reflective mirror moving to a middle position when the engine is turned off. It is inherent that Kato's system has a predetermined angle range because there are physical limitations of the movement of the reflective mirror.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (JP 06-048218).

Regarding independent claim 1, Kato discloses a drop 1 that displays various information (display pattern) where the drop 1 outputs a display light 2 and where the display light 2 is reflected off a reflecting mirror 5 and where the reflecting mirror 5 is rotatable by a slewing gear 6 (paragraph 11), which reads on the claimed display apparatus for vehicles characterized by having a display device that emits display light, a reflecting member for reflecting the display light, driving means for angularly moving the reflecting member. Kato also discloses the reflecting mirror 5 makes the mid-position of the range which carries out movable criteria location of the reflecting mirror 5 (paragraph 19) and when the key switch is off, the slewing gear 6 drives the location of the reflecting mirror 5 to a criteria location (paragraph 23), which reads on the claimed control means for angularly moving the reflecting member to a middle position of a predetermined angle range when an ignition switch is turned off. Kato discloses in Figure 2 a positive angle (“+”) and a negative angle (“-“) in where the reflecting mirror can move 5. Kato discloses in Figure 5 at step s5 the reflective mirror returns to a “0” position. It is inherent that 0 is between a positive scale and a negative scale. Step s5 is after step s4 in where step s4 determines if the engine is off, then proceed to s5 and if the engine is not off, the proceed to s1, which suggest a middle position that the reflective mirror returns to when the engine is off. It is inherent that Kato’s system has a predetermined angle range because there are physical limitations of the movement of the reflective mirror. It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Kato’s system to return only to a middle position. One would be motivated to do so because this would help prevent the lost in the amount of drives of the slewing gear.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (JP 06-048218) in view of Kanamori et al. (JP 2001-097073).

Regarding dependent claims 2 and 3, Kato did not explicitly disclose angular positions are memorized, but did disclose the use of rotating the reflecting mirror 5 when the key switch is on. Kanamori discloses a heads-up display device for vehicles similar to Kato and where the rotation location of a reflecting mirror 50 is set as an initial value position in step 200 and where rotation location of the reflecting mirror 50 was memorized before the ignition switch IG is turned ON in step 231 and where the driving motor 73 moves the reflecting mirror 50 to the mentioned initial value position (paragraph 53), which reads on the claimed memory part for memorizing an angular position of the reflecting member and memory operations means for making the angular position be memorized in the memory part and the claimed ignition switch is turned on, the reflecting member is angularly moved to the angular position memorized in the memory part. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine Kato's system with Kanamori's teachings of moving the reflecting mirror to a memorized position when the ignition switch is on, which gives drivers the ability to change the position of the reflecting memory that has already been preset by the driver's preference without manually setting to desired position every time the position of the reflecting mirror has changed from the desired position, which is more convenient for the driver.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (JP 06-048218) in view of Yamatani et al. (JP 11-278100).

Regarding dependent claim 4, Kato did not explicitly disclose a stepping motor, but did disclose the slewing gear 6 has a servo motor 61 attached to a rotation gear 64 (paragraph 12). Kato did not explicitly disclose switches that moves the reflecting mirror upward and downward, but did disclose the reflecting mirror to be rotatable upwardly and downwardly. Yamatani discloses stepping motor 29 that can rotate a reflecting mirror 25 and be adjusted by a switch (not shown) so the observer 9 may see the virtual image 10 (paragraph 16). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine Kato's system with Yamatani's teachings of having observers to adjust the angle of rotation of the reflecting mirror to have a virtual image being displayed to the observer that is comfortably pleasing and convenient for the observer.

Claims 5, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (JP 06-048218) in view of Takaoka (US 4,320,812).

Regarding independent claim 6, Kato discloses a drop 1 that displays various information (display pattern) where the drop 1 outputs a display light 2 and where the display light 2 is reflected off a reflecting mirror 5 and where the reflecting mirror 5 is rotatable by a slewing gear 6 (paragraph 11), which reads on the claimed display apparatus for vehicles characterized by having a display device that emits display light, a reflecting member for reflecting the display light, driving means for angularly moving the reflecting member. Kato also discloses the reflecting mirror 5 makes the mid-position of the range which carries out movable criteria location of the reflecting mirror 5 (paragraph 19). Kato did not disclose the middle position of the angle range is an origin position. Takaoka discloses an original position restore circuit

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whereby at the start of the vehicle, the rotor of the stepping motor is restored from the final stop position to the original position for control (column 5, lines 54 – 59 and column 8, lines 48 – 51) and here the original position restore circuit restores the rotor of the stepping motor to the original position (column 5, lines 37 – 59). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine Kato's system with Takaoka's teachings of a pre-step process of returning the stepping motor to its original position upon the start of an engine to return the reflective mirror to an original position upon the start of an engine.

Regarding dependent claim 7, Takaoka discloses an original position restore circuit whereby at the start of the vehicle, the rotor of the stepping motor is restored from the final stop position to the original position for control (column 5, lines 54 – 59 and column 8, lines 48 – 51) and here the original position restore circuit restores the rotor of the stepping motor to the original position (column 5, lines 37 – 59), which reads on the claimed having control means for angularly moving the reflecting member to the origin position when an ignition switch is turned on.

Regarding dependent claim 5, Kato did not explicitly disclose a middle detection mean, but discloses a process of moving the reflecting member to the middle position when the ignition switch is turned off. Takaoka discloses an original position restore circuit whereby at the start of the vehicle, the rotor of the stepping motor is restored from the final stop position to the original position for control (column 5, lines 54 – 59 and column 8, lines 48 – 51) and here the original position restore circuit restores the rotor of the stepping motor to the original position (column 5, lines 37 – 59). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine Kato's system with Takaoka's teaching of a having a middle detection

circuit to move the reflecting member to the original position with a middle detection position when the ignition switch is turned off, which provides the hardware to accurately and properly detect the middle position.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (JP 06-048218) in view of Takaoka (US 4,320,812) and Yamatani et al. (JP 11-278100).

Regarding dependent claim 10, Kato did not explicitly disclose a stepping motor, but did disclose the slewing gear 6 has a servo motor 61 attached to a rotation gear 64 (paragraph 12). Kato did not explicitly disclose switches that moves the reflecting mirror upward and downward, but did disclose the reflecting mirror to be rotatable upwardly and downwardly. Yamatani discloses stepping motor 29 that can rotate a reflecting mirror 25 and be adjusted by a switch (not shown) so the observer 9 may see the virtual image 10 (paragraph 16). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine Kato's system with Takaoka's teaching and Yamatani's teachings of having observers to adjust the angle of rotation of the reflecting mirror to have a virtual image being displayed to the observer that is comfortably pleasing and convenient for the observer.

Claims 8, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (JP 06-048218) in view of Takaoka (US 4,320,812) and Kanamori et al. (JP 2001-097073).

Regarding dependent claim 8, Kato did not explicitly disclose angular positions are memorized, but did disclose the use of rotating the reflecting mirror 5 when the key switch is on. Kanamori discloses a heads-up display device for vehicles similar to Kato and where the rotation



location of a reflecting mirror 50 is set as an initial value position in step 200 and where rotation location of the reflecting mirror 50 was memorized before the ignition switch IG is turned ON in step 231 and where the driving motor 73 moves the reflecting mirror 50 to the mentioned initial value position (paragraph 53), which reads on the claimed memory part for memorizing an angular position of the reflecting member and memory operations means for making the angular position be memorized in the memory part and the claimed ignition switch is turned on, the reflecting member is angularly moved to the angular position memorized in the memory part. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine Kato's system with Takaoka's teachings of a pre-step process of returning the stepping motor to its original position upon the start of an engine and Kanamori's teachings of moving the reflecting mirror to a memorized position when the ignition switch is on, which gives drivers the ability to change the position of the reflecting memory that has already been preset by the driver's preference without manually setting to desired position every time the position of the reflecting mirror has changed from the desired position, which is more convenient for the driver.

Regarding dependent claim 9, Kato or Kanamori did not disclose a pre-step process of moving the reflective member to the original position when the ignition switch is turned on. which setting the position the original position every time the engine starts would prevent malfunction to the motor. Takaoka discloses an original position restore circuit whereby at the start of the vehicle, the rotor of the stepping motor is restored from the final stop position to the original position for control (column 5, lines 54 – 59 and column 8, lines 48 – 51) and here the original position restore circuit restores the rotor of the stepping motor to the original position (column 5, lines 37 – 59). It would have been obvious for one of ordinary skill in the art at the

time of the invention to combine Kato's system with Takaoka's teachings of a pre-step process of returning the stepping motor to its original position upon the start of an engine and Kanamori's teachings of moving the reflecting mirror to a memorized position when the ignition switch is on, which setting the position to the original position every time the engine starts would help prevent malfunction to the motor.

Regarding dependent claim 11, claim 11 is similar in scope to claims 6 – 9, and thus the rejections for claims 6 – 9 hereinabove are applicable to claim 11.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey J. Chow whose telephone number is (571)-272-8078. The examiner can normally be reached on Monday - Friday 10:00AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJC

  
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SUPERVISORY PATENT EXAMINER